# Update on Proposed Analysis of Organic Tracers

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#### **Overview**

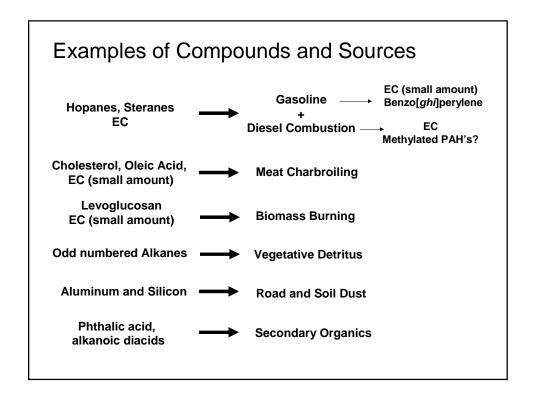
- Last MATES-III Technical Advisory Committee meeting it was recommended that organic tracer analysis be considered on PM<sub>2.5</sub> samples
- Informal meeting with professors at the USC Particle Center and Supersite on May, 5<sup>th</sup> regarding:
  - -Benefits to using organic tracers
  - -Methodology

### Possible Approach

- Compile monthly 1 in 3 day PM<sub>2.5</sub> samples from each of the ten fixed sites
  - -120 total samples
  - -500 µg of material
- Analyze for 30-50 organic compounds
  - -Source specific organic compounds
  - -Secondary organic compounds
- Compile data (Organic Tracers, EC/OC, Metals)
- Apply Chemical Mass Balance model to obtain source apportionment

#### **Chemical Mass Balance Model**

- Used to estimate source contributions to ambient samples collected at monitoring sites using source profiles.
- Establishes a mass balance from measured constituents in an ambient sample as coming from a linear combination of the chemical compositions from contributing sources



#### Studies Measuring Diesel in So. Cal.

# Manchester-Neesvig *et al* Source Contributions PM<sub>10</sub> (μg/m³) 1995 Average

	•	•	•
	Upland		Long Beach
Diesel	3.25	2.39	3.57
Gasoline	0.39	0.34	0.60
Wood Smoke	0.91	0.61	0.48
Vegetative Detritus	0.46	0.52	0.34
Natural Gas Comb.	0.01	0	0.0
Tire Debris	0.68	0.95	1.18

#### MATES-II

April 1998 - March 1999 Average  $PM_{10}$  (µg/m3)

	Fontana	Rubidoux	Long Beach
Diesel	3.51	3.52	2.64

## Issues:

- Analytical and Model Uncertainty
- All Sources Accounted For
- Accuracy of Source Profiles

Next Steps?